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AUTHOR Senese, Donald J.
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ABSTRACT

The advent of the Information Age brings the means and tools to improve education through the use of technology. In order to assist educators in kindergarten through grade 12 and in higher education with the development of technological programs, the federal government has made the implementation of technology a primary initiative. There will be a continuation of grants and loans to students preparing themselves for employment in technological fields and the provision of grants for innovative projects in higher education using technology. Other programs that have been implemented include a multi-year effort to collect data on computer use and computer literacy in elementary and secondary education; the sponsoring of a conference focusing on research needs of computers; awarding more than $1.5 million to 12 school-based technology demonstration sites to provide examples for the utilization of technology; and the establishment of the National Diffusion Network (NDN), which identifies exemplary programs and assists school districts in the adoption and implementation of successful programs. The NDN has identified 10 schools to serve as models using technology in education and will provide funds to assist other educators in the replication of these models. (DJR)

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"Instructional Technology: Realizing the Potential"

by
Dr. Donald J. Senese
Assistant Secretary for Educational
Research and Improvement
U.S. Education Department

Presented to Participants in the
Association for Educational Communications and
Technology Instructional Technology Seminar
Utah State University
Logan, Utah

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"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

It is slightly after 6:30 p.m. here on a cool and windy and rainy day in Paris.

We have just finished an instructive and interesting conference - an "International Conference on Education and New Information Technologies" conducted by the Centre for Educational Research and Innovation of the Organization for Economic Co-operation and Development here in Paris. We had about 200 delegates from 24 countries looking at the overall development and effect of technology on education. It is amazing how similar are the concerns throughout the world in this important innovation for education.

The name Utah has a special reverence here especially this year. This is the fortieth anniversary of the landing at Normandy on D-Day which turned the tide for the Allies in World War II. Utah and Omaha were two of the beaches on which American troops landed as the allies moved to liberate Paris from the Nazis.

Utah was also represented at this conference in the person of WICAT. In the display of handware and software, from the United States and 5 other countries, we had the elementary reading program IRIS developed by WICAT and a display of the WICAT hardware and WICAT's WISE authoring system.

I want to extend a greeting to Joe Lipson and Duston Houston of WICAT as well as the people at Utah State University like Kent Wood, Ron Thorkildsen and Alan Hofmeister. Certainly we have looked to Utah for pioneering efforts in the area of videdisks especially for the handicapped and in the area of math and I understand soon in the field of science.

We talk about technology and use of technology. Its useful to have a demonstration of it as I can speak directly to all of you in Utah thousands of miles away from Paris.

One of the most important functions of secondary schools, colleges, and universities is to prepare the young people of our nation to become responsible members of society--a part of which includes preparing them with a means for earning a living and for being productive. Having enough skilled workers is an essential aspect of our economy and having the means to increase productivity of those workers will be essential to keeping our nation a dynamic world economic power.

The challenges are great. Just over a year ago, on April 26, 1983, the National Commission on Excellence in Education released its report, entitled A Nation at Risk: The Imperative for Educational Reform. The Commission members spent almost two years studying and reviewing education in America as well as in other industrialized nations. In their report they documented a decline in education in the United States that was not only frightening but disheartening. A Nation at Risk and other subsequent reports issued a clarion call for action to turn back the tide of mediocrity and open the floodgates toward excellence.

The advent of the "information-age" despite all its complexities brings with it the means and tools to improve education. It is important for educators to realize this--and to begin to utilize the vast resources at their disposal in order to improve education.

By utilizing the technological means we now have access to, we have the capacity to improve the productivity of the classroom. Teachers can become more effective in their teaching practices; students can become more effective learners. We can through technology enhance learning for students, increase teacher productivity, and develop more effective schools.

The computer, as well as other technological innovations, can provide us with a means of offering improved educational opportunities in a cost-effective manner. They can help us develop our human resources to their greatest potential.

Many educators, while aware of the potential benefits these technological innovations hold, may lack the knowledge to adopt technology for use in their educational programs. They eagerly seek guidance and direction.

In order to assist educators in the development of worthwhile programs in technology, U.S. Secretary of Education, T.H. Bell has made technology a primary initiative of the U.S. Department of Education. The Office of Educational Research and Improvement has been given the department's lead role in implementing the "Technology Initiative."

The federal government will continue programs at both the kindergarten through 12th grade and higher education levels which assist directly and indirectly with the ability of schools, colleges and universities to participate in the technology revolution. The student loan program will continue to provide grants and loans to students so they follow studies preparing themselves for the new work opportunities in technology.

There is also the FIPSE program (Fund for the Improvement of Postsecondary Education) which operates from our Office of Postsecondary Education. FIPSE makes specific grants for innovative projects in higher education and in recent years under the Reagan Administration these grants have favored projects in technology. These grants provide the important funds to develop programs which can be disseminated to other postsecondary institutions.

At the kindergarten through secondary level, other programs are being implemented. The Educational Technology and Science Staff of the Office of Educational Research and Improvement along with the National Center of Education Statistics are involved in a multi-year effort to gather data on "computer use and computer literacy in elementary and secondary education." In the NCES report, Computer Literacy: Definition and Survey Items for Assessment in Schools, the purpose of the project is identified as:

> ...the development of a definition of computer literacy, a glossary of computer terminology, a short bibliography of computer literacy, and a pool of questions on the use and application of computers in education.

OERI sponsored a conference at the University of Pittsburgh and Carnegie Mellon University in November of 1982. The focus was on research needs of computers. The report of that conference Computers in Education: Realizing the Potential should be helpful to all educators.

Secretary Bell announced at the end of last year awards totalling more than 1.5 million dollars to 12 school-based technology demonstration sites. The purpose of these demonstration sites is to provide examples which other schools and/or school districts can follow. Through this program, we have identified excellent programs which are already being offered, and utilized successfully, in various local districts throughout the United States. The demonstration sites which were selected are representative of urban, suburban, and rural areas. Educators can look at these programs and see ways that they might be able to utilize technology in their own programs.

Another effective tool of dissemination is the National Diffusion Network which identifies exemplary programs and assists school districts in the adoption and implementation of these programs. It utilizes the knowledge of

successful programs which can be used in other areas to bring the knowledge of good educational practices to other school districts and to avoid duplication of effort. The NDN network has already assisted many school districts in their entry into the age of technology. We have identified through the NDN ten "lighthouse schools" - outstanding models of the use of technology in education and have provided funding to assist in training other educators to replicate these models in their own school systems.

The main thing we must remember is that we should not be overwhelmed by all of the complexities that face us into a frenzy of inaction. There is one thing certain about our entry into the information age---education will be the hallmark of that new age. And that does not mean just one "formal" education but rather a lifetime of education. Up to the present decade one education would prepare you for a lifetime in most careers. Today, most adults will require re-education, or re-training every 5 to 10 years--four or five re-educations throughout a lifetime.

During the 1960s and 1970s our nation suffered a malaise-- a lowering of expectations and a decline in hope. The feeling seemed to be pervasive that our great accomplishments were in the past and that the future presented a hopelessness for ourselves and our society as we experienced more pollution, running out of resources and supposed problems like over-population and nuclear war. The prognostications of the Club of Rome became a club of doom, a sword of Damocles hanging over our heads and the heads of our young people.

However, there does seem to be a spirit of renewed optimism in our nation. We have a tendency to accept as routine the benefits in a society while concentrating on the negatives. Fortunately technology presents to us an unlimited capacity to imagine greater developments in our economy, our

standard of living, the expansion of cultural opportunities and increased productivity. In his last book, The Coming Boom, the late Herman Kahn noted that he expected high and sustained growth through the 1980s and 1990s because of a whole host of new technologies and technological improvements ready for large scale development. We need as a nation a collective optimism and enthusiasm and will to develop this technology so that we will not become the tired and burdened and have our nation slump into the roll call of nations which once had been great but lost the will to survive. We as a nation once conquered the plains and the forests of this new nation to build our cities and our farms; the challenge of technology represents a new frontier for the United States to further develop an opportunity oriented society for all.

It is an awesome challenge but one for which all are becoming more and more prepared.